

ECM-Z200

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



SPECIFICATIONS

General

Type Electret condenser microphone
(with back-electret condenser capsules)

Microphone output plug

L-shaped miniplug

Battery Size AA (IEC designation R6)

Dimensions Microphone head: 23 dia. x 125 mm
($9\frac{1}{2}$ x 5 inches)

Microphone body:
28 x 56.5 x 75 mm (w/h/d)
($1\frac{1}{8}$ x $2\frac{1}{4}$ x 3 inches)

Weight Approx. 111g (3.9oz)

Finish Matte black finish

Performance

Frequency response 150Hz - 15,000Hz

Directivity Changeable (from uni-directional to super cardioid characteristics)

Output impedance

Low impedance, unbalanced

Output level (deviation ± 3 dB)

	Open circuit voltage
Uni-directional	-64.0dB (0.63mV)*1
Super cardioid characteristics	-52.0dB (2.82mV)

	Effective output level
Uni-directional	-44.9dBm*2
Super cardioid characteristics	-32.9dBm

*1 0dB = 1V/1μbar, 1,000 Hz

*2 0dBm = 1mW/10μbar, 1,000 Hz

Recommended load impedance is more than 3 kilohms.

Power requirements

Normal operating voltage: 1.5V

Minimum operating voltage:

Approx. 1V

Current drain: Less than 1.5mA
(at normal operating voltage)

Battery life: Approx. 700 hours
with Sony SUM-3 (NS)

Maximum sound pressure input level*3

Uni-directional: More than 110dB SPL

Super cardioid characteristics:
More than 100dB SPL (at
1,000Hz, 1% distortion, 0dB
SPL = $2 \times 10^{-4} \mu\text{bar}$)

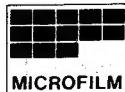
*3 The mean value is taken and converted to the equipment input sound level.

Environmental temperatures

-20°C to +60°C (-4°F to +140°F)
for storage

0°C to +60°C (+32°F to +140°F)
for operation

ELECTRET CONDENSER MICROPHONE
SONY®



ECM-Z200

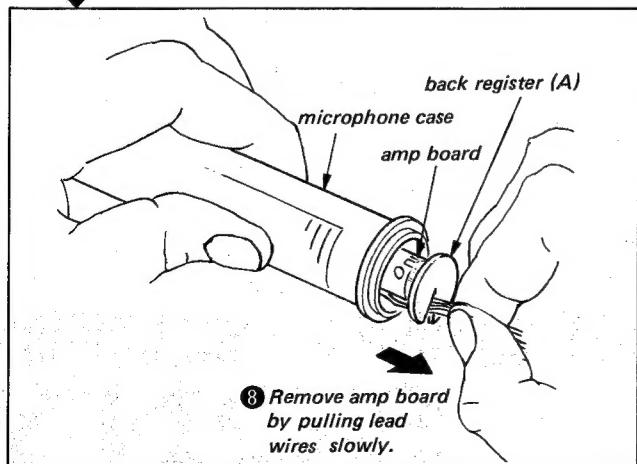
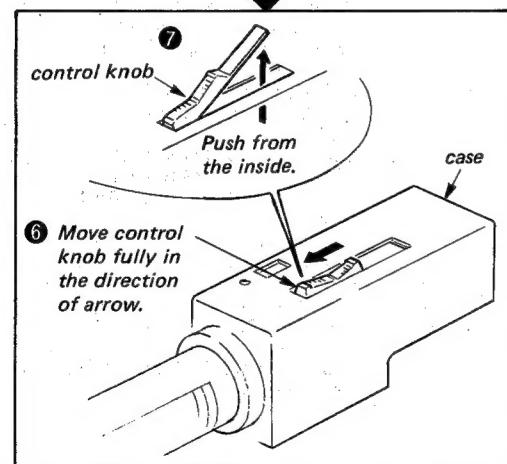
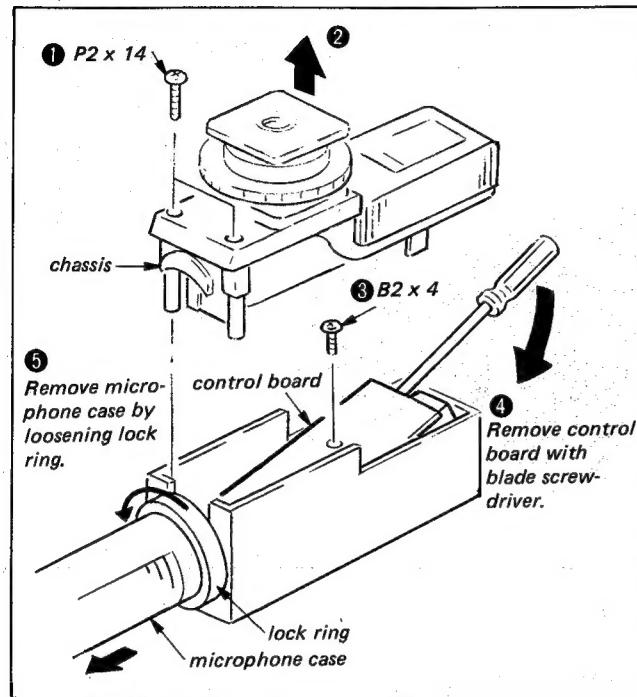
1. DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

Control board removal: ① - ④

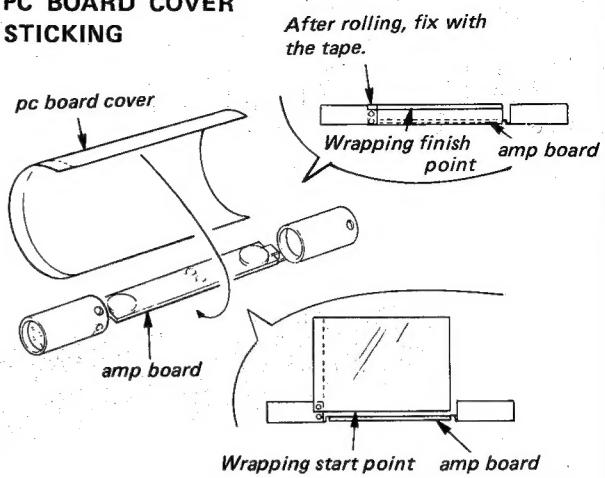
Volume knob removal: ① - ④, ⑥, ⑦

Amp board removal: ① - ⑤, ⑧



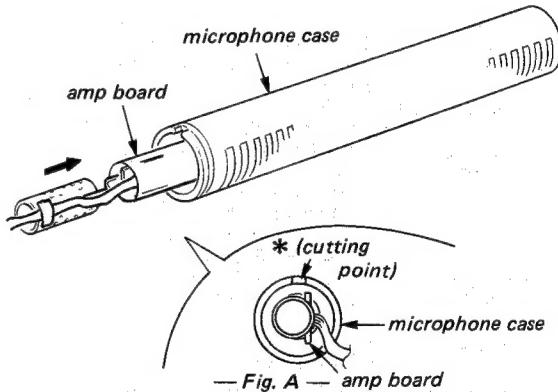
2. CAUTION ON REASSEMBLING

PC BOARD COVER STICKING



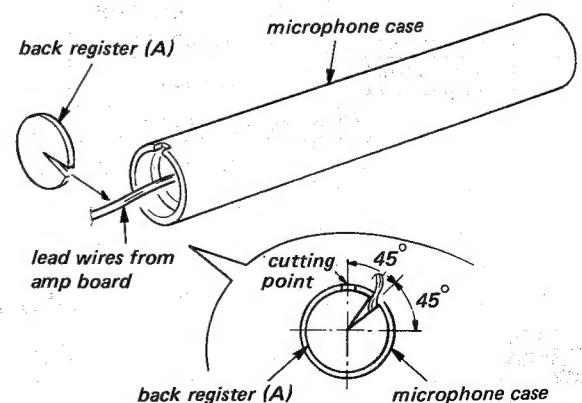
AMP BOARD POSITION SETTING

Set amp board into the microphone case by pushing it vertically to the cutting point (*). (See Fig. A.)

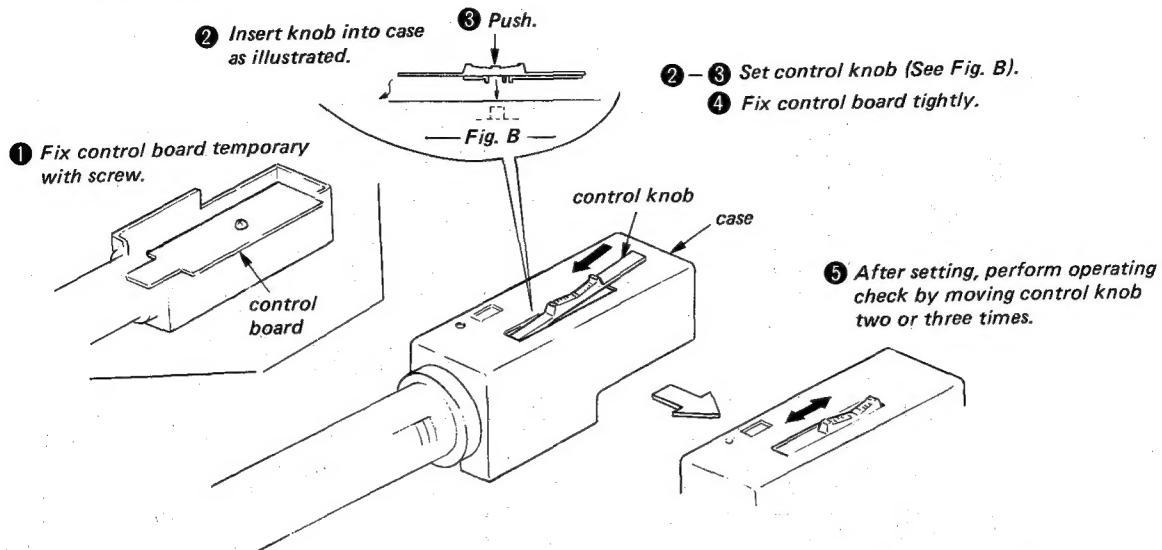


BACK REGISTER (A) INSERTION

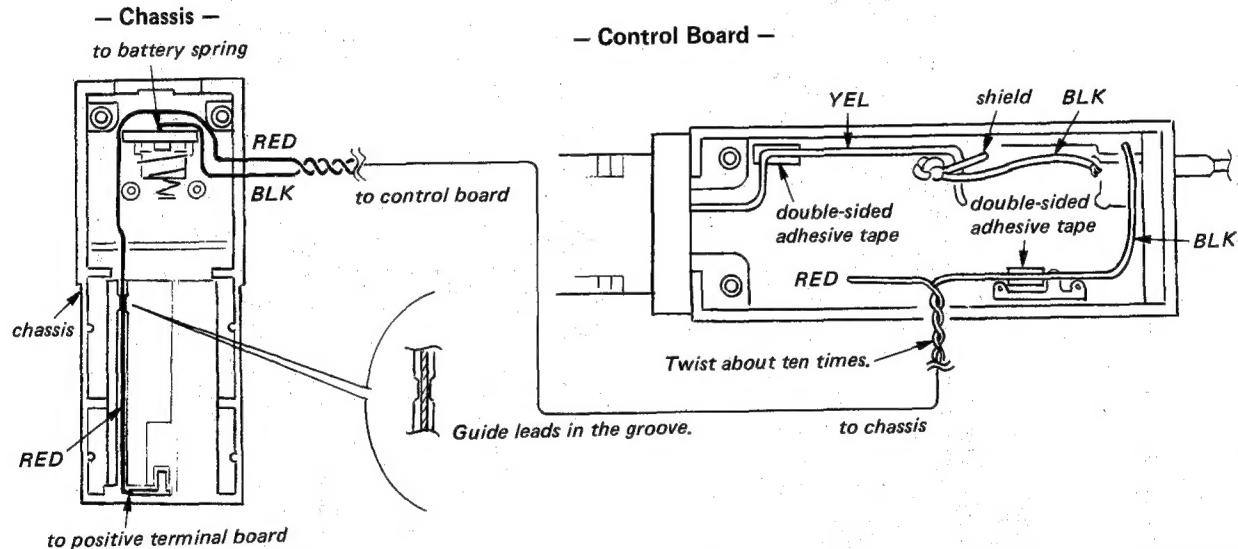
Be careful of the direction of back register (A).



CONTROL KNOB SETTING



WIRING

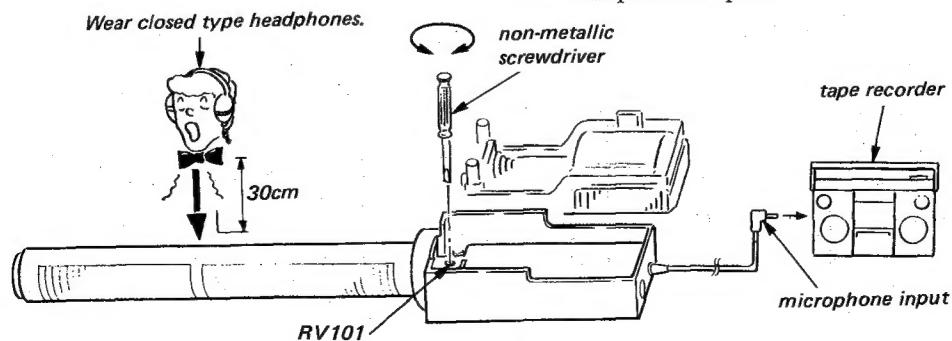


3. DIRECTIVITY ADJUSTMENT

Note: This adjustment should be made when replacing following parts.

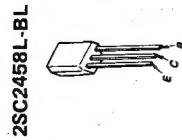
Microphone capsule, FET (Q101, 102), RV101, parts on amp board (except for C102, 103, 202, 203).

- ① Connect ECM-Z200 to the microphone input of the tape recorder.
- ② Apply your voice to the microphone unit at right angle as shown.
- ③ Adjust RV101 to obtain minimum output from headphone output.

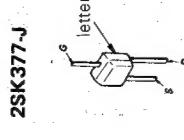


ECM-Z200

- Semiconductor Lead Layouts

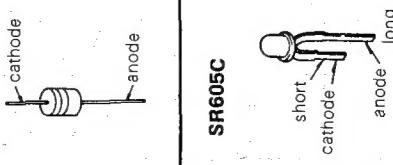


2SC2458L-BL



2SK377-J

ISS119

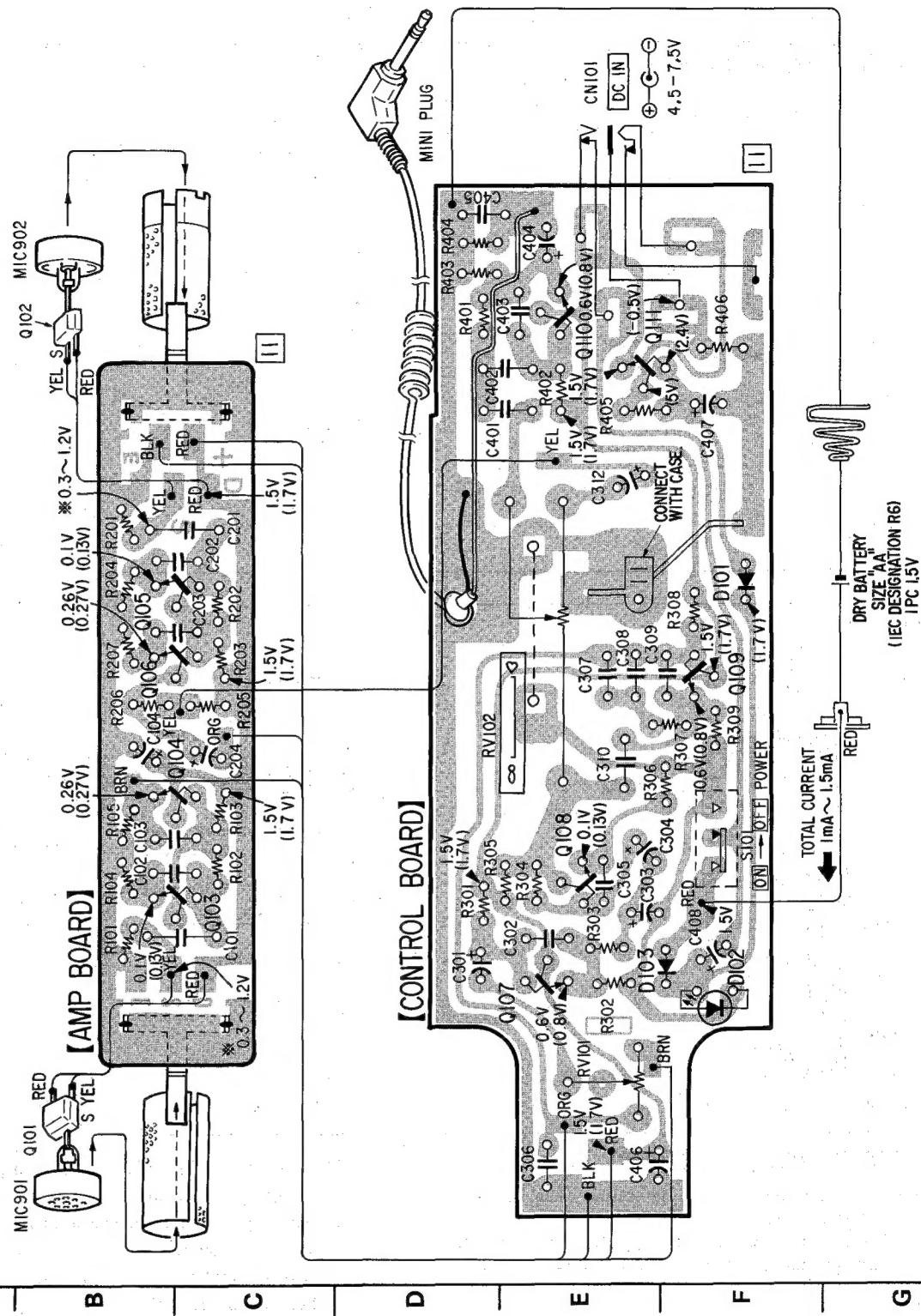


SR605C

4. MOUNTING DIAGRAM

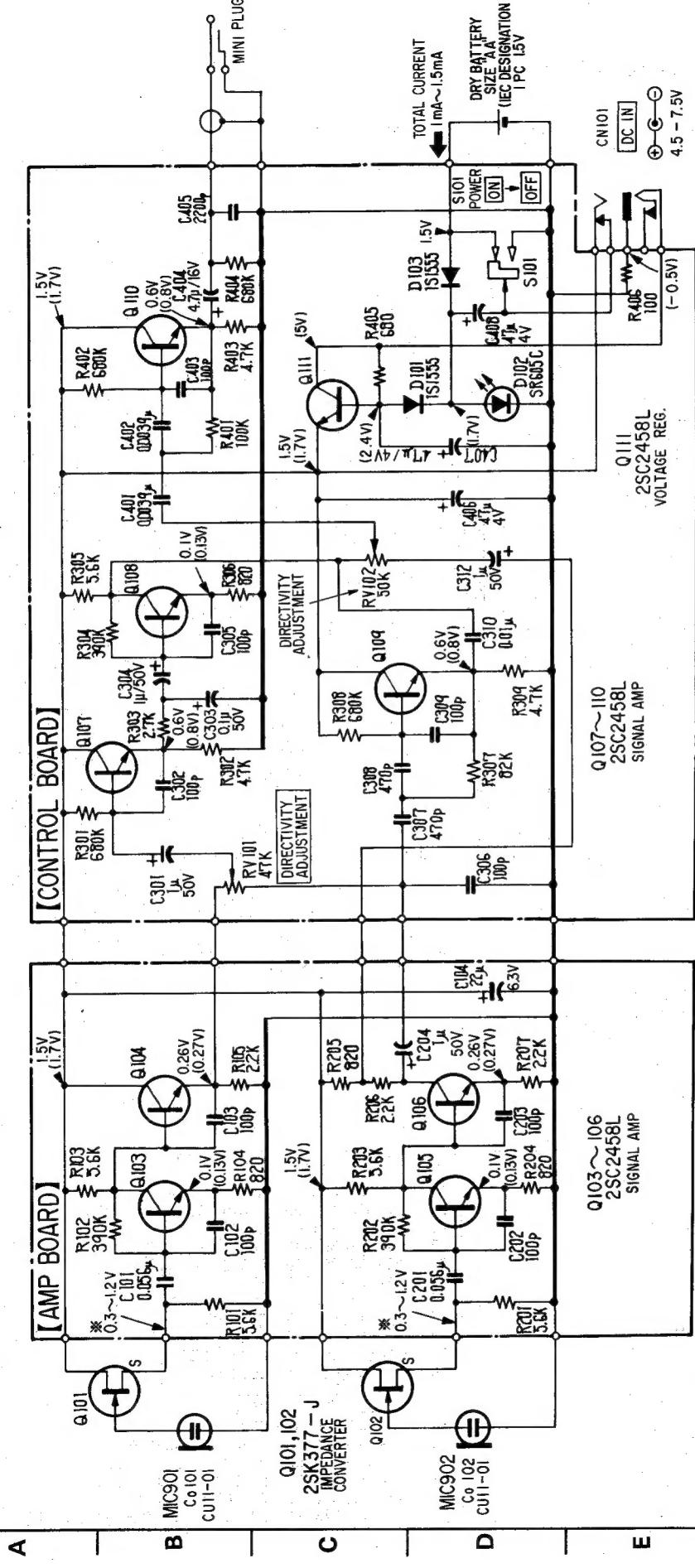


Note:
• — : parts extracted from the conductor side.



10
9
8
7
6
5
4
3
2
1

5. SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. μF : μF
- 50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- : adjustment for repair
- : voltage are dc with respect to ground unless otherwise noted.

- Readings are taken under no-signal conditions with a VOM ($50\text{k}\Omega/\text{V}$).
- no mark: Operating with dry batteries (1.5V).
- () : Applying external power supply 5V.
- * : Power voltage change according to the rank of FET (Q101, 102).
- Switch

Ref. No.	Switch	Position
S101	power	ON

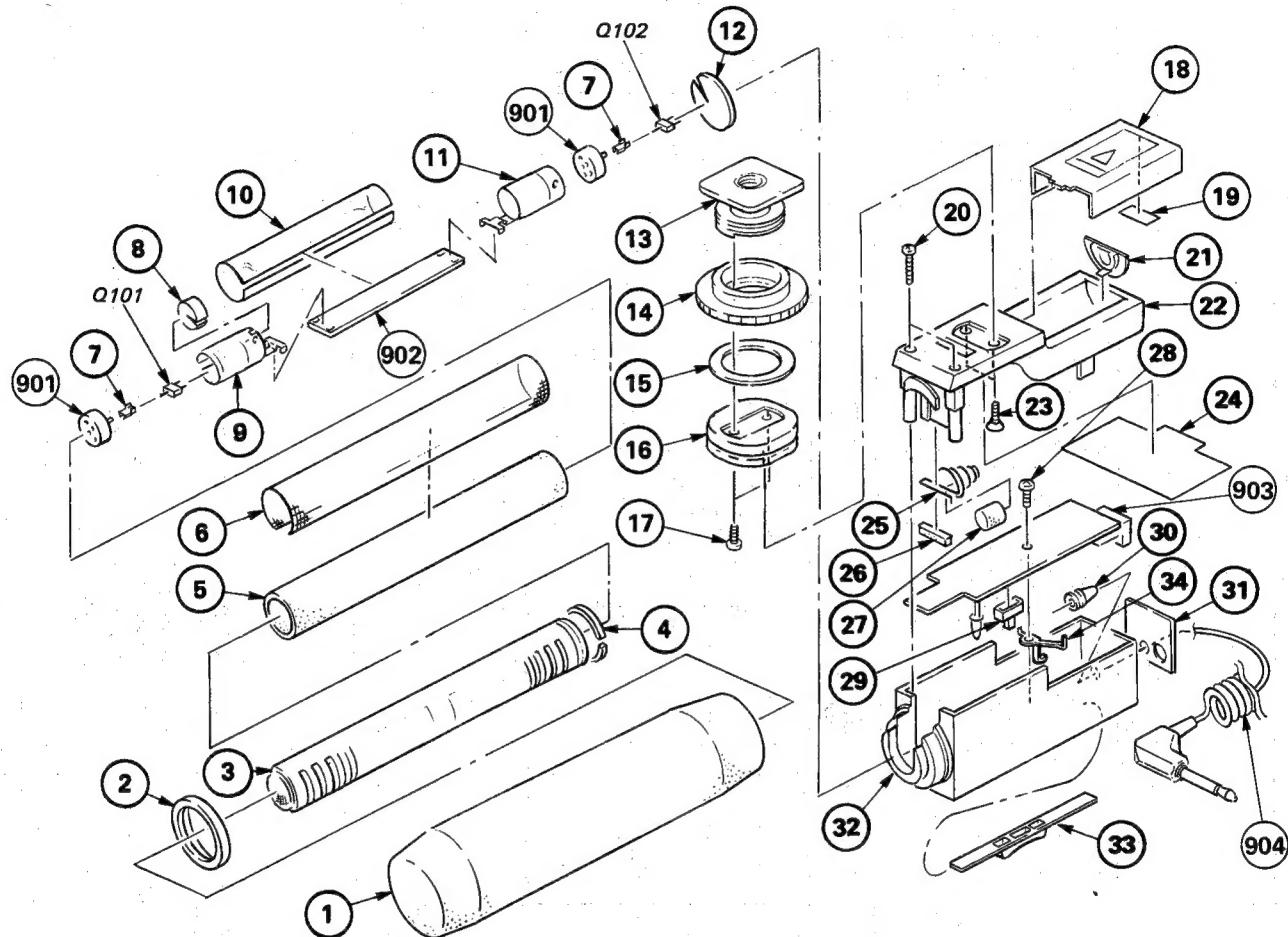
6. EXPLODED VIEW AND PARTS LIST

NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The construction parts of an assembled part are indicated with a collation number in the remark column.



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
1	2-537-317-01	SCREEN, WIND		20	7-621-255-85	SCREW +P 2X14	
2	2-537-309-01	RING, LOCK		21	2-520-113-00	BOARD, TERMINAL, POSITIVE	
3	X-2537-303-1	CASE ASSY, MICROPHONE		22	2-537-319-01	CHASSIS	
4	2-537-308-01	RING, STOPPER		23	7-621-559-30	SCREW +K 2.6X5	
5	*2-537-312-01	SCREEN, INNER		24	*2-533-804-00	PLATE, BLIND	
6	*2-537-314-01	GRILLE, SIDE		25	2-524-105-00	SPRING	
7	2-523-713-00	TERMINAL		26	*2-537-316-01	CUSHION, PC BOARD	
8	2-533-813-00	REGISTER, BACK		27	9-911-815-03	CUSHION	
9	*X-2537-301-1	PLATE ASSY (A), SHIELD		28	7-621-772-18	SCREW +B 2X4	
10	*2-537-315-01	COVER, PC BOARD		29	2-537-304-01	KNOB, SWITCH	
11	*X-2537-302-1	PLATE ASSY (B), SHIELD		30	2-284-602-11	BUSHING	
12	*2-537-313-01	REGISTER (A), BACK		31	2-537-311-01	LABEL	
13	2-532-809-00	HOLDER, SHOE		32	2-537-318-01	CASE	
14	2-532-816-00	KNOB, FIXED		33	2-537-320-01	KNOB, CONTROL	
15	2-537-305-01	WASHER, SHOE		34	*2-537-306-01	TERMINAL, GROUND	
16	2-537-301-01	DAMPER (INSERT), SHOE		901	8-814-173-00	MICROPHONE UNIT CU11-01	
17	7-685-133-14	SCREW +P 2.6X6 TYPE2 SLIT		902	*1-615-051-11	PC BOARD, AMPLIFIER	
18	2-533-805-00	COVER, BATTERY		903	*1-615-052-11	PC BOARD, CONTROL	
19	2-520-118-00	LABEL		904	1-557-873-11	CORD, MICROPHONE (ONE CORE)	

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS

- All resistors are in ohms.
- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	8-814-173-00	MICROPHONE UNIT CU11-01
902	*1-615-051-11	PC BOARD, AMPLIFIER
903	*1-615-052-11	PC BOARD, CONTROL
904	1-557-873-11	CORD, MICROPHONE (ONE CORE)
C101	1-161-022-00	CERAMIC 0.056MF 10% 25V
C102	1-102-106-00	CERAMIC 100PF 10% 50V
C103	1-102-106-00	CERAMIC 100PF 10% 50V
C104	1-124-222-00	ELECT 22MF 20% 6.3V
C201	1-161-022-00	CERAMIC 0.056MF 10% 25V
C202	1-102-106-00	CERAMIC 100PF 10% 50V
C203	1-102-106-00	CERAMIC 100PF 10% 50V
C204	1-124-255-00	ELECT 1MF 20% 50V
C301	1-124-255-00	ELECT 1MF 20% 50V
C302	1-102-106-00	CERAMIC 100PF 10% 50V
C303	1-124-249-00	ELECT 0.1MF 20% 50V
C304	1-124-255-00	ELECT 1MF 20% 50V
C305	1-102-106-00	CERAMIC 100PF 10% 50V
C306	1-102-106-00	CERAMIC 100PF 10% 50V
C307	1-162-290-31	CERAMIC 470PF 10% 50V
C308	1-162-290-31	CERAMIC 470PF 10% 50V
C309	1-102-106-00	CERAMIC 100PF 10% 50V
C310	1-130-483-00	MYLAR 0.01MF 5% 50V
C312	1-124-255-00	ELECT 1MF 20% 50V
C401	1-130-478-00	MYLAR 0.0039MF 5% 50V
C402	1-130-478-00	MYLAR 0.0039MF 5% 50V
C403	1-102-106-00	CERAMIC 100PF 10% 50V
C404	1-124-231-00	ELECT 4.7MF 20% 16V
C405	1-101-002-00	CERAMIC 0.0022MF 50V
C406	1-124-432-00	ELECT 47MF 20% 4V
C407	1-124-432-00	ELECT 47MF 20% 4V
C408	1-124-432-00	ELECT 47MF 20% 4V
CN101	1-562-767-11	JACK, EXTERNAL POWER
D101	8-719-911-19	DIODE 1SS119
D102	8-719-160-52	DIODE SR605C
D103	8-719-911-19	DIODE 1SS119
Q101	8-729-802-30	TRANSISTOR 2SK377-J
Q102	8-729-802-30	TRANSISTOR 2SK377-J
Q103	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q104	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q105	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q106	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q107	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q108	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q109	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q110	8-729-205-84	TRANSISTOR 2SC2458L-BL
Q111	8-729-205-84	TRANSISTOR 2SC2458L-BL

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R101	1-247-849-00	CARBON 5.6K 5% 1/6W
R102	1-247-893-00	CARBON 390K 5% 1/6W
R103	1-247-849-00	CARBON 5.6K 5% 1/6W
R104	1-247-829-00	CARBON 820 5% 1/6W
R105	1-247-839-00	CARBON 2.2K 5% 1/6W
R201	1-247-849-00	CARBON 5.6K 5% 1/6W
R202	1-247-893-00	CARBON 390K 5% 1/6W
R203	1-247-849-00	CARBON 5.6K 5% 1/6W
R204	1-247-829-00	CARBON 820 5% 1/6W
R205	1-247-829-00	CARBON 820 5% 1/6W
R206	1-247-839-00	CARBON 2.2K 5% 1/6W
R207	1-247-839-00	CARBON 2.2K 5% 1/6W
R301	1-247-899-00	CARBON 680K 5% 1/6W
R302	1-247-847-00	CARBON 4.7K 5% 1/6W
R303	1-247-841-00	CARBON 2.7K 5% 1/6W
R304	1-247-893-00	CARBON 390K 5% 1/6W
R305	1-247-849-00	CARBON 5.6K 5% 1/6W
R306	1-247-829-00	CARBON 820 5% 1/6W
R307	1-247-877-00	CARBON 82K 5% 1/6W
R308	1-247-899-00	CARBON 680K 5% 1/6W
R309	1-247-847-00	CARBON 4.7K 5% 1/6W
R401	1-247-879-00	CARBON 100K 5% 1/6W
R402	1-247-899-00	CARBON 680K 5% 1/6W
R403	1-247-847-00	CARBON 4.7K 5% 1/6W
R404	1-247-899-00	CARBON 680K 5% 1/6W
R405	1-247-827-00	CARBON 680 5% 1/6W
R406	1-247-807-00	CARBON 100 5% 1/6W
RV101	1-230-068-00	RES, ADJ, CARBON 47K
RV102	1-230-737-11	RES, VAR, SLIDE 50K
S101	1-554-438-00	SWITCH, SLIDE
<u>ACCESSORY & PACKING MATERIAL</u>		
Part No.	Description	
1-528-027-11	(Canadian,AEP,UK,E)...BATTERY, NEW SUPER (SUM-3)(NS)	
1-556-251-00	CORD, CONNECTION (RK-510)	
1-557-872-11	CORD, CONNECTION (RK-520)	
2-534-019-01	LID, TRANSPARENT	
2-534-020-01	FRAME, PROTECTION, INDIVIDUAL	
2-537-317-01	SCREEN, WINDOW	
2-537-321-01	CASE, CARRYING	
2-537-323-11	INDIVIDUAL CARTON	
2-537-324-01	LABEL	
2-537-325-01	FRAME, INNER	
2-599-250-11	(Canadian,AEP,UK,E)...MANUAL, INSTRUCTION (US).....MANUAL, INSTRUCTION	
2-599-250-21		

